

10/577629
IAP12 Rec'd PCT/PTO 28 APR 2006

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Case No. 06-275)

In re Application of:)
Crabtree et al.) Examiner: TBD
Serial No.: TBD) Art Unit: TBD
Filed: April 28, 2006)
For: PROCESS FOR THE PRODUCTION)
OF LACTAMS)

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to the duty of disclosure provided by 35 C.F.R. § 1.56 and §§ 1.97-98, the applicants wish to make the following references of record in the above-identified application. Copies of the non-patent references are enclosed. Copies are also listed in the PTO/SB/08B form enclosed herewith. It is requested that the documents be given careful consideration and that they be cited of record in the prosecution history of the present application so that they will appear on the face of the patent issuing from the present application.

Portions of the references may be material to the examination of the pending claims, however no such admission is intended. 37 C.F.R. 1.97 (h). The references have not been reviewed in sufficient detail to make any other representation and, in particular, no representation is intended as to the relative importance of any portion of the references. This Statement is not a representation that the cited references have effective dates early enough to be "prior art" within

the meaning of 35 U.S.C. sections 102 or 103, nor is this submission to be construed as a representation that a search has been made.

CITED REFERENCES

U.S. Patents

	<u>Patent Number</u>	<u>Name of Patentee</u>	<u>Date</u>
1.	2,351,939	Drossbach et al.	06-20-1944
2.	2,843,600	McKeever	07-15-1958
3.	3,080,377	Liao	03-05-1963
4.	3,109,005	Lidov	10-29-1963
5.	3,637,743	Prince	01-25-1972
6.	3,957,827	Lyons	05-18-1976
7.	4,263,175	Pesa et al.	04-21-1981
8.	4,356,124	Pesa et al.	10-26-1982
9.	4,485,245	Hsu et al.	11-27-1984
10.	4,485,246	Lyons	11-27-1984
11.	4,892,955	Wada et al.	01-09-1990
12.	4,931,573	Wada et al.	06-05-1990
13.	5,021,589	Wada et al.	06-04-1991
14.	5,047,561	Miyazawa et al.	09-10-1991
15.	5,077,442	Hara et al.	12-31-1991
16.	5,079,372	Wada et al.	01-07-1992
17.	5,434,273	Weyer et al.	07-18-1995
18.	5,580,991	Sugiyama et al.	12-03-1996

19.	5,912,358	Frohn et al.	06-15-1999
20.	6,008,375	Bergfeld et al.	12-28-1999

Foreign Patents

	<u>Patent Number</u>	<u>Name of Patentee</u>	<u>Date</u>
21.	GB 976,939	Himmele et al.	12-02-1964
22.	GB 2 055 798 A	Sweeney	03-11-1981
23.	WO 96/23803 A1	Beatty et al.	08-08-1996
24.	WO 02/102772 A1	Werpy et al.	12-27-2002
25.	WO 03/093208 A1	Kilner et al.	11-13-2003
26.	JP 02-075716	Reichle et al.	03-15-1990
27.	JP 02121976 A	Hara	05-09-1990
28.	JP 02200680 A	Wada et al.	08-08-1990
29.	JP 02207081 A	Miyazawa et al.	08-16-1990
30.	JP 02233674 A	Miyazawa et al.	09-17-1990
31.	JP 02235880 A	Miyazawa et al.	09-18-1990
32.	JP 03074377 A	Miyazawa et al.	03-28-1991
33.	JP 03083974 A	Miyazawa et al.	04-09-1991
34.	JP 03112973 A	Otake et al.	05-14-1991
35.	JP 03141273 A	Miyazawa et al.	06-17-1991
36.	JP 03204870 A	Otake et al.	09-06-1991
37.	JP 04091085 A	Miyazawa et al.	03-24-1992
38.	JP 04217636 A	Hara et al.	08-07-1992
39.	JP 06107654 A	Fuchigami et al.	04-19-1994
40.	JP 06172338 A	Koga et al.	06-21-1994

41.	JP 07033756 A	Koga et al.	02-03-1995
42.	JP 07082260 A	Sato et al.	03-28-1995

Other Documents

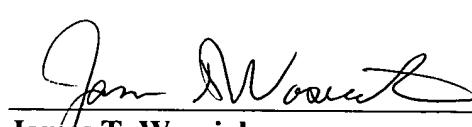
43. H. Inagaki, S. Nishimura, Y. Hara, K. Wada, "Hydrogenation Reaction of Carbonyl Compounds Catalyzed by Cationic Ruthenium Complexes," *Science and Technology in Catalysis* 1994, pp. 327-330.
44. Y. Hara, K. Wada, "Hydrogenation Reaction of Carboxylic Anhydrides Catalyzed by a New and Highly Active Cationic Ruthenium Complex," *Chemistry Letters* 1991, pp. 553-554.
45. R.A. Grey, G.P. Pez, A. Wallo, "Anionic Metal Hydride Catalysts. 2. Application to the Hydrogenation of Ketones, Aldehydes, Carboxylic Acid Esters, and Nitriles," *Journal of the American Chemical Society* 1981, No. 103, pp. 7536-7542.
46. U. Matteoli, G. Menchi, M. Bianchi, F. Piacenti, "Homogeneous Catalytic Hydrogenation of the Esters of Bicarboxylic Acids -Part III. EthyleneGlycol from Dimethyl Oxalate," *Journal of Molecular Catalysis*, No. 44, 1988, pp. 347-355.
47. U. Matteoli, G. Menchi, M. Bianchi, F. Piacenti, S. Ianelli, M. Nardelli, "Structure and Catalytic Activity of Phosphine-substituted Ruthenium Carbonyl Carboxylates," *Journal of Organometallic Chemistry*, Vol. 498, 1995, pp. 177-186.
48. H. Teunissen, C.J. Elsevier, "Ruthenium Catalysed Hydrogenation of Dimethyl Oxalate to Ethylene Glycol," *Chemical Communications*, 1997, pp. 667-668.
49. H.T. Teunissen, C.J. Elsevier, "Homogeneous Ruthenium Catalyzed Hydrogenation of Esters to Alcohols, *Chemical Communications*, 1998, pp. 1367-1368.

Respectfully submitted,

McDonnell, Boehnen, Hulbert & Berghoff LLP

Date: **April 28, 2006**

By:


James T. Wasciak
Registration No. 50,803

10/577629

IAP12 Rec'd PCT/PTO 28 APR 2006

O/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Please type a plus sign (+) inside this box C

+

Substitute for form 1449A/PTO

Complete if Known

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Application No.

TBD

Filing Date:

April 28, 2006

First Named Inventor

Simon Peter Crabtree

Group Art Unit

TBD

Examiner Name

TBD

Sheet

1

of

3

Attorney Docket No.

06-275

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. 1	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Figures Appear
		Number	Kind Code ² (if known)			
	1.	2,351,939		Drossbach et al.	06-20-1944	
	2.	2,843,600		McKeever	07-15-1958	
	3.	3,080,377		Liao	03-05-1963	
	4.	3,109,005		Lidov	10-29-1963	
	5.	3,637,743		Prince	01-25-1972	
	6.	3,957,827		Lyons	05-18-1976	
	7.	4,263,175		Pesa et al.	04-21-1981	
	8.	4,356,124		Pesa et al.	10-26-1982	
	9.	4,485,245		Hsu et al.	11-27-1984	
	10.	4,485,246		Lyons	11-27-1984	
	11.	4,892,955		Wada et al.	01-09-1990	
	12.	4,931,573		Wada et al.	06-05-1990	
	13.	5,021,589		Wada et al.	06-04-1991	
	14.	5,047,561		Miyazawa et al.	09-10-1991	
	15.	5,077,442		Hara et al.	12-31-1991	
	16.	5,079,372		Wada et al.	01-07-1992	
	17.	5,434,273		Weyer et al.	07-18-1995	
	18.	5,580,991		Sugiyama et al.	12-03-1996	
	19.	5,912,358		Frohn et al.	06-15-1999	
	20.	6,008,375		Bergfeld et al.	12-28-1999	
Examiner Signature					Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC. 20231

10/577629

IAP12 Rec'd PCT/PTO 28 APR 2006 PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Please type a plus sign (+) inside this box C

+

Substitute for form 1449A/PTO

Complete if Known

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Application No.

TBD

Filing Date:

April 28, 2006

First Named Inventor

Simon Peter Crabtree

Group Art Unit

TBD

Examiner Name

TBD

Sheet

2

of

3

Attorney Docket No.

06-275

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines Where Relevant Passages or Figures Appear	T ²
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
21.	GB	976,939			Himmele et al.	12-02-1964		
22.	GB	2 055 798	A		Sweeney	03-11-1981		
23.	WO	96/23803	A1		Beatty et al.	08-08-1996		
24.	WO	02/102772	A1		Werpy et al.	12-27-2002		
25.	WO	03/093208	A1		Kilner et al.	11-13-2003		
26.	JP	02-075716			Reichle et al.	03-15-1990		
27.	JP	02121976	A		Hara	05-09-1990		
28.	JP	02200680	A		Wada et al.	08-08-1990		
29.	JP	02207081	A		Miyazawa et al.	08-16-1990		
30.	JP	02233674	A		Miyazawa et al.	09-17-1990		
31.	JP	02235880	A		Miyazawa et al.	09-18-1990		
32.	JP	03074377	A		Miyazawa et al.	03-28-1991		
33.	JP	03083974	A		Miyazawa et al.	04-09-1991		
34.	JP	03112973	A		Otake et al.	05-14-1991		
35.	JP	03141273	A		Miyazawa et al.	06-17-1991		
36.	JP	03204870	A		Otake et al.	09-06-1991		
37.	JP	04091085	A		Miyazawa et al.	03-24-1992		
38.	JP	04217636	A		Hara et al.	08-07-1992		
39.	JP	06107654	A		Fuchigami et al.	04-19-1994		
40.	JP	06172338	A		Koga et al.	06-21-1994		
41.	JP	07033756	A		Koga et al.	02-03-1995		
42.	JP	07082260	A		Sato et al.	03-28-1995		
Examiner Signature						Date Considered		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC. 20231

10/577629

Please type a plus sign (+) inside this box C

+

IAP12 Rec'd PCT/PTO 28 APR 2006 PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

Complete if Known

Application No.

TBD

Filing Date:

April 28, 2006

First Named Inventor

Simon Peter Crabtree

Group Art Unit

TBD

Examiner Name

TBD

(use as many sheets as necessary)

Sheet 3 of 3 Attorney Docket No. 06-275

OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. 1	Include name of author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
	43.	H. Inagaki, S. Nishimura, Y. Hara, K. Wada, "Hydrogenation Reaction of Carbonyl Compounds Catalyzed by Cationic Ruthenium Complexes," <i>Science and Technology in Catalysis</i> 1994, pp. 327-330.	
	44.	Y. Hara, K. Wada, "Hydrogenation Reaction of Carboxylic Anhydrides Catalyzed by a New and Highly Active Cationic Ruthenium Complex," <i>Chemistry Letters</i> 1991, pp. 553-554.	
	45.	R.A. Grey, G.P. Pez, A. Wallo, "Anionic Metal Hydride Catalysts. 2. Application to the Hydrogenation of Ketones, Aldehydes, Carboxylic Acid Esters, and Nitriles," <i>Journal of the American Chemical Society</i> 1981, No. 103, pp. 7536-7542.	
	46.	U. Matteoli, G. Menchi, M. Bianchi, F. Piacenti, "Homogeneous Catalytic Hydrogenation of the Esters of Bicarboxylic Acids -Part III. EthyleneGlycol from Dimethyl Oxalate," <i>Journal of Molecular Catalysis</i> , No. 44, 1988, pp. 347-355.	
	47.	U. Matteoli, G. Menchi, M. Bianchi, F. Piacenti, S. Ianelli, M. Nardelli, "Structure and Catalytic Activity of Phosphine-substituted Ruthenium Carbonyl Carboxylates," <i>Journal of Organometallic Chemistry</i> , Vol. 498, 1995, pp. 177-186.	
	48.	H. Teunissen, C.J. Elsevier, "Ruthenium Catalysed Hydrogenation of Dimethyl Oxalate to Ethylene Glycol," <i>Chemical Communications</i> , 1997, pp. 667-668.	
	49.	H.T. Teunissen, C.J. Elsevier, "Homogeneous Ruthenium Catalyzed Hydrogenation of Esters to Alcohols, <i>Chemical Communications</i> , 1998, pp. 1367-1368.	

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC. 20231